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REMARKS

Before this Amendment, claims 1-30, 33-38, and 40-68 were pending.

By this Amendment, claims 33-38, 40, 41, and 51-68 have been canceled solely in response to the Restriction Requirement and the Examiner's withdrawal from consideration of these claims. The Applicant reserves the right to prosecute claims 33-38, 40, 41, and 51-68 in divisional applications. After this Amendment is entered, claims 1-30 and 42-50 will be pending.

The Applicant thanks the Examiner for indicating that claims 42-50 are allowable and for rejoining these claims.

In connection with the telephonic interview¹ of September 4, 2003 between the undersigned Applicant's representative and Examiner Moran, the Applicant provides the following summary.

During the interview:

- The Examiner stated that she would rejoin claims 42-50.
- The Examiner stated that claims 2, 3, 7, 8, and 18 were free of the prior art.
- The Examiner and the Applicant's representative discussed amending claims 13-17 and 22-30 so that these claims no longer depended from claim 1 and 2 but instead depended only from claim 2. The Examiner suggested this because the Examiner took the position that claim 1 was not free of the prior art. The Applicant's representative declined to so amend these claims, since the Applicant's representative believed that claim 1 was free of the prior art. The Applicant's representative requested that the Examiner identify the prior art she believed was relevant to

claim 1 and in response the Examiner cited an English abstract of a Russian article by an author named Debadov. The Examiner took the position that certain disclosures with respect to nucleic acid dilutions and concentrations in Debadov made claim 1 unpatentable. The Examiner stated that she would issue an Office Action after she received a copy of the entire Debadov article. The Debadov article is Debadov, 1981, Mol. Osn. Genet. Protsessov., Tr. Mezhdunar. Genet. Kongr., 14th, pp. 234-239.

- The Examiner suggested that claims 1, 4-6, 33-38, 40, 41, and 51-68 be canceled but the Applicant's representative declined this suggestion.

The rejections under 35 U.S.C. §112

Claims 1-30 were rejected for indefiniteness.

Claim 1 was rejected because the Examiner felt that: "It is unclear whether the fragment, the vector, or the combination of the two are intended to be at 'a first nucleic acid concentration.'"

The Applicant respectfully traverses this rejection. When read in light of the specification, claim 1 is not indefinite. The definiteness of a claim is not to be judged in a vacuum. Instead the claim must be viewed in the context of the disclosure of the application from which it is derived. The test for definiteness is whether one skilled in the art would understand the bounds of the claim when read in light of the specification. Orthokinetics, Inc. v. Safety Travel Chairs, Inc., 806 F.2d 1565, 1 USPQ2d 1081 (Fed. Cir. 1986). See also BJ Services Co. v. Halliburton Energy Services, Inc., 338 F.3d 1368, 1372, 67 USPQ2d 1692, (Fed. Cir. 2003): "The question becomes whether one of ordinary skill in the art would understand what is claimed when the claim is read in light of the specification."

The present invention is directed to improved cloning methods in which the insertion step is separated from the circularization step. The point of step (a) in claim 1 is to insert the fragment into the linearized vector, to form a concatamer. Since this insertion step

¹ The interview consisted of a telephone call from Examiner Moran to the Applicant's representative and a return

requires intermolecular joining, a relatively high nucleic acid concentration (the “first nucleic acid concentration”) for the combination of all nucleic acids involved in step (a) is required, as compared to the “second nucleic acid concentration,” which applies to the circularization of the vector-insert combination, an intramolecular reaction. This is explained in the specification, at page 8, lines 16-22:

In general, the present invention involves separation of the cloning process into two distinct steps: insertion and circularization. In the insertion step, the linearized vector is joined to the nucleic acid fragment at fairly high nucleic acid concentrations which encourage intermolecular rather than intramolecular joining reactions. In the circularization step, the -vector-insert monomers are circularized at comparatively low nucleic acid concentrations that favor intramolecular circularization rather than intermolecular joining.

Reading claim 1 in light of the specification leads to the conclusion that claim 1 is not indefinite. Therefore, it is respectfully requested that this rejection be withdrawn.

Claim 1 was also rejected because the Examiner felt that “It is unclear if the length recitation “is intended to ... [apply to] the ‘hybridized cohesive circularization ends’ recited in the first line of step (b) or the ‘single-stranded cohesive circularization ends’ recited in the third line of step (b).”

The Applicant does not believe that there is any confusion as to what the length recitation refers to since the “hybridized cohesive circularization ends” are the same (and therefore have the same length) as the “single-stranded cohesive circularization ends” except that the hybridized ends are in double-stranded form while the single-stranded ends are, of course, single-stranded. That these ends are the same is shown in Figure 1. Part 1 of Figure 1 shows the ends before cloning begins. Part 3 shows the ends as “hybridized cohesive circularization ends.” Part 4 shows the ends following melting, i.e., as “single-stranded cohesive circularization ends.” It is clear from Figure 1 that these ends remain the same physical objects, with the same length. This is also made clear by Figures 3 and 5. Thus, the length recitation applies to both the “hybridized cohesive circularization ends” and the “single-stranded cohesive circularization

call from the Applicant’s representative to Examiner Moran.

ends.” Therefore, claim 1 is not indefinite and it is respectfully requested that this rejection be withdrawn.

Claim 2 was rejected because the Examiner felt that: “It is unclear whether the fragment, the vector, or the combination of the two are intended to be at ‘a first nucleic acid concentration.’”

This aspect of the rejection of claim 2 is the same as the first aspect of the rejection of claim 1 discussed above. Therefore, for the same reasons as discussed above with respect to claim 1, claim 2 is not indefinite and it is respectfully requested that this rejection be withdrawn.

Claim 2 was also rejected because of the recitation of “nucleic acid concentration circularization.”

Claim 2 has been amended to delete the word “circularization” from this phrase. Therefore, it is respectfully requested that this rejection be withdrawn.

Claim 4 was rejected because the Examiner felt that: “It is unclear whether applicant intends to limit each vector part to comprise a cohesive circularization end and an insertion end, or intends each vector part to comprise a cohesive circularization end which can hybridize to a complementary cohesive circularization end and to an insertion end.

The Applicant believes that the nature of the invention, as disclosed in the specification, makes it clear that claim 4 is directed to subject matter where each vector part comprises a cohesive circularization end and an insertion end rather than to subject matter where cohesive circularization ends hybridize to both a complementary cohesive circularization end and to an insertion end. Nevertheless, in the interest of expediting prosecution, claim 4 has been reformatted so as to make this even more clear. Therefore, it is respectfully requested that this rejection be withdrawn.

Claim 5 was rejected because the Examiner felt that claim 5 "limits a fragment to comprise a 'complementary' insertion end and a 'complementary' cohesive circularization end, but does not recite what these are intended to be complementary to."

Again, the Applicant believes that the nature of the invention, as disclosed in the specification, would prevent any confusion from arising. Since claim 5 depends from claim 1, claim 5, like claim 1, requires the joining of the fragment and the vector. Therefore, one skilled in the art would readily understand that the insertion end of the fragment is complementary to the insertion end of the vector. Similarly, the cohesive circularization end of the fragment is complementary to the cohesive circularization end of the vector. In this way, the fragment and the vector may be joined while at the same time the limitation of step (c) of claim 1 can be carried out. If the insertion ends of the fragment and vector were not complementary to each other, the fragment and vector would not be joined; if the cohesive circularization ends of the fragment and vector were not complementary to each other, they could not "reanneal[] ... to form a circularized vector containing a nucleic acid insert," as required by step (c).

Nevertheless, in the interest of expediting prosecution, claim 5 has been amended to make the above even more clear. Therefore, it is respectfully requested that this rejection be withdrawn.

Claim 8 was rejected for reasons similar to those for which claim 5 was rejected. The Examiner felt that claim 8 "limits a nucleic acid fragment to comprise a "complementary" insertion end and a "complementary" cohesive circularization end, but does not recite what these are intended to be complementary to."

For the same reasons as discussed above with respect to claim 5, the Applicant believes that claim 8 is not indefinite. Nevertheless, in the interest of expediting prosecution, claim 8 has been amended along the lines by which claim 5 was amended. Therefore, it is respectfully requested that this rejection be withdrawn.

Claims 9-11 were rejected because the Examiner felt that it was unclear whether the "applicant intends to limit the method of claim 1 to further comprise the steps recited in each

of claims 9-11, or intends to limit the circularization ends. If applicant intends to limit the cohesive circularization ends, then it is unclear what structural limitation of the product (i.e. cohesive circularization ends) is intended by the "formation" steps."

The Applicant intends the limitation at issue to refer to the step of forming the cohesive circularization ends rather than to refer to the structure of the cohesive circularization ends so formed. While the Applicant believes these claims in their current form would not be misunderstood by one skilled in the art, in the interest of expediting prosecution, these claims have been amended to even more particularly point out this intended meaning.

Claim 16 was rejected because the Examiner felt that, with respect to preparing the blunt end, it was unclear whether the "applicant intends to limit the method of claim 1 to further comprise the steps recited in [claim] 16, or intends to limit the blunt ends."

The Applicant intends the limitation at issue to refer to the step of preparing the blunt ends rather than to refer to the structure of the blunt ends so formed. While the Applicant believes this claim in its current form would not be misunderstood by one skilled in the art, in the interest of expediting prosecution, this claim has been amended to even more particularly point out this intended meaning.

Claim 17 was rejected because the Examiner felt that, with respect to preparing the 3' overhangs, it was unclear whether the "applicant intends to limit the method of claim 1 to further comprise the steps recited in [claim] 17, or intends to limit the circularization end [sic, 3' overhangs]."

The Applicant intends the limitation at issue to refer to the step of preparing the 3' overhangs rather than to refer to the structure of the 3' overhangs so formed. While the Applicant believes this claim in its current form would not be misunderstood by one skilled in the art, in the interest of expediting prosecution, this claim has been amended to even more particularly point out this intended meaning.

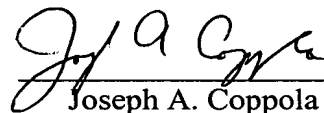
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The time for responding to the Office Action was set for February 17, 2004. Therefore, it is believed that this Response is timely and that no fee is required for extension of time. If this is in error, please treat this paper as including a Petition for the Extension of Time under 37 C.F.R. § 1.136(a) for a period sufficient to permit the filing of a response and charge the required fee to Kenyon & Kenyon's Deposit Account No. 11-0600.

The Applicants hereby also make a Conditional Petition for any relief available to correct any defect seen in connection with this filing, or any defect seen to be remaining in this application after this filing. The Commissioner is authorized to charge Kenyon & Kenyon's Deposit Account No. 11-0600 for the Petition fee and any other fees required to effect this Conditional Petition.

Respectfully submitted,

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